Claims

1. Method for controlling the peak power of a filtered signal in a single carrier data transmission system, the method comprising the steps of receiving a digital sequence (13) from a data source; generating a new digital sequence ($a(k)$); shaping filtering (34) the new digital sequence ($a(k)$) and producing a filtered digital sequence ($y(k)$), characterized in that the step of generating a new digital sequence ($a(k)$) comprises the steps of: encoding data by an algebraic error correcting code (28); and performing a bit modification (30) by deliberately adding errors in such a way that the peak power of the filter signal affected by the deliberately introduced errors is lower than the peak power of the signal unaffected by errors.

2. Method according to claim 1, characterized by the step of cancelling the deliberately added errors at the receive side by adopting proper algebraic decoding techniques.

3. Method according to claim 1 or 2, characterized in that the step of generating a new digital sequence ($a(k)$) comprises the step of encoding by an algebraic ($c(N,K)$) code the most significant bits (MSB) of the constellation symbol, the less significative bits (LSB) being sent directly to a mapper.

4. Method according to claim 3, characterized in that the step of encoding by an algebraic ($c(N,K)$) code comprises encoding by a BCH (N,K) code.

5. Circuit for controlling the peak power of a filtered signal in a single carrier data transmission system, the circuit comprising means for receiving a digital sequence (13) from a data source; means for generating a new digital sequence ($a(k)$); a shaping filter (34) for filtering the new digital sequence ($a(k)$) and producing a filtered digital sequence ($y(k)$), characterized in that the means for generating a new digital sequence ($a(k)$) comprise: an encoder (28) for encoding data by an algebraic error correcting code; and means (30) for performing a bit modification by deliberately adding errors in such a way that the peak power of the filter signal affected by the deliberately introduced errors is lower than the peak power of the signal unaffected by errors.

6. Circuit according to claim 5, characterized in that the encoder (28)

encodes, by an algebraic ($c(N,K)$) code, the most significant bits (MSB) of the constellation symbol, the less significative bits (LSB) being sent directly to a mapper.

7. Circuit according to claim 6, characterized in that the step of encoding by an algebraic ($c(N,K)$) code comprises encoding by a BCH (N,K) code.